



**International Atomic Energy Agency**

**Milestones in the Development of  
a  
National Infrastructure for  
Nuclear Power –Technology  
Assessment**

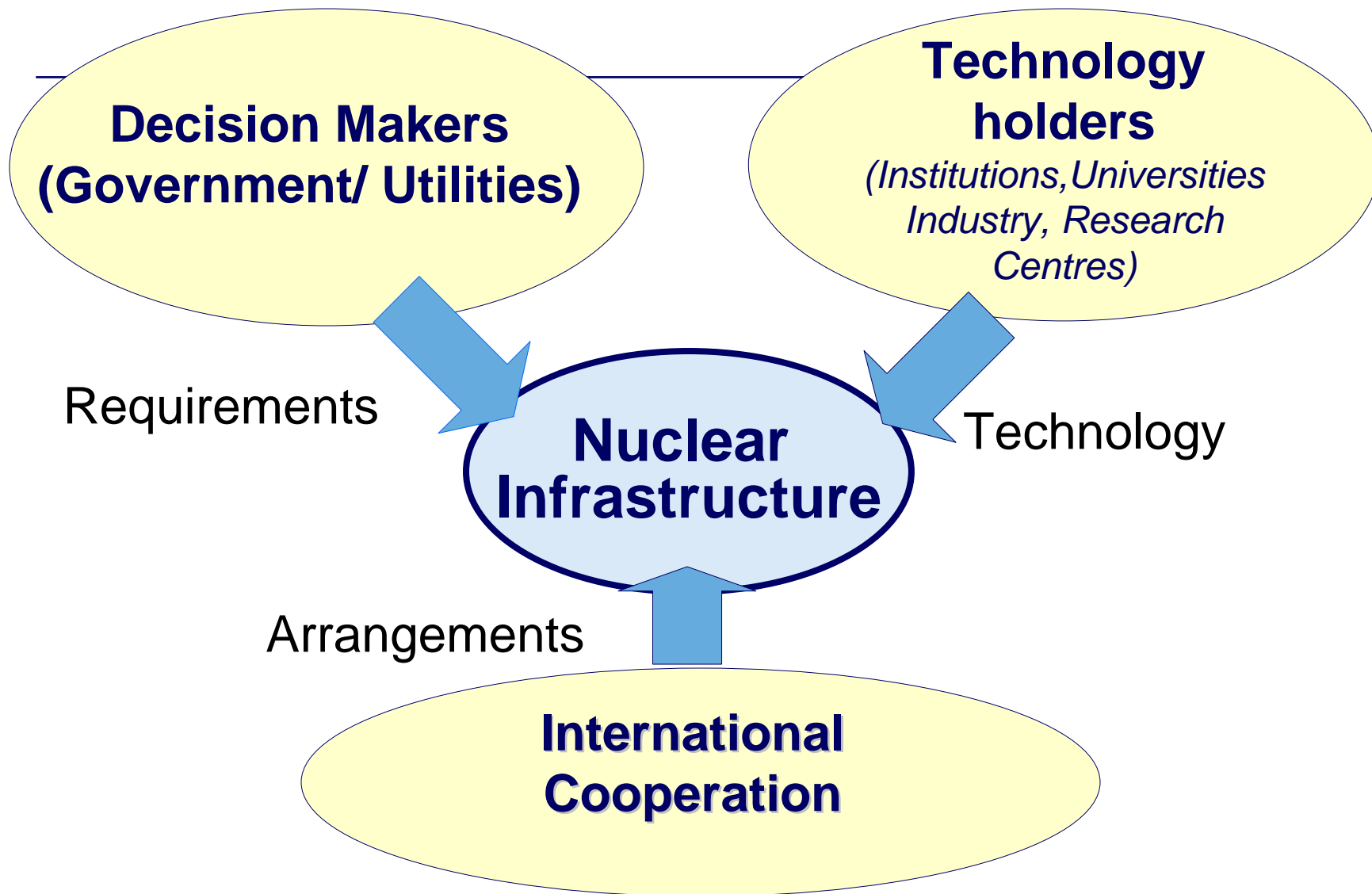
**Tom Mazour**

**Team Leader, Infrastructure and Planning for the  
Introduction of Nuclear Power Programmes**

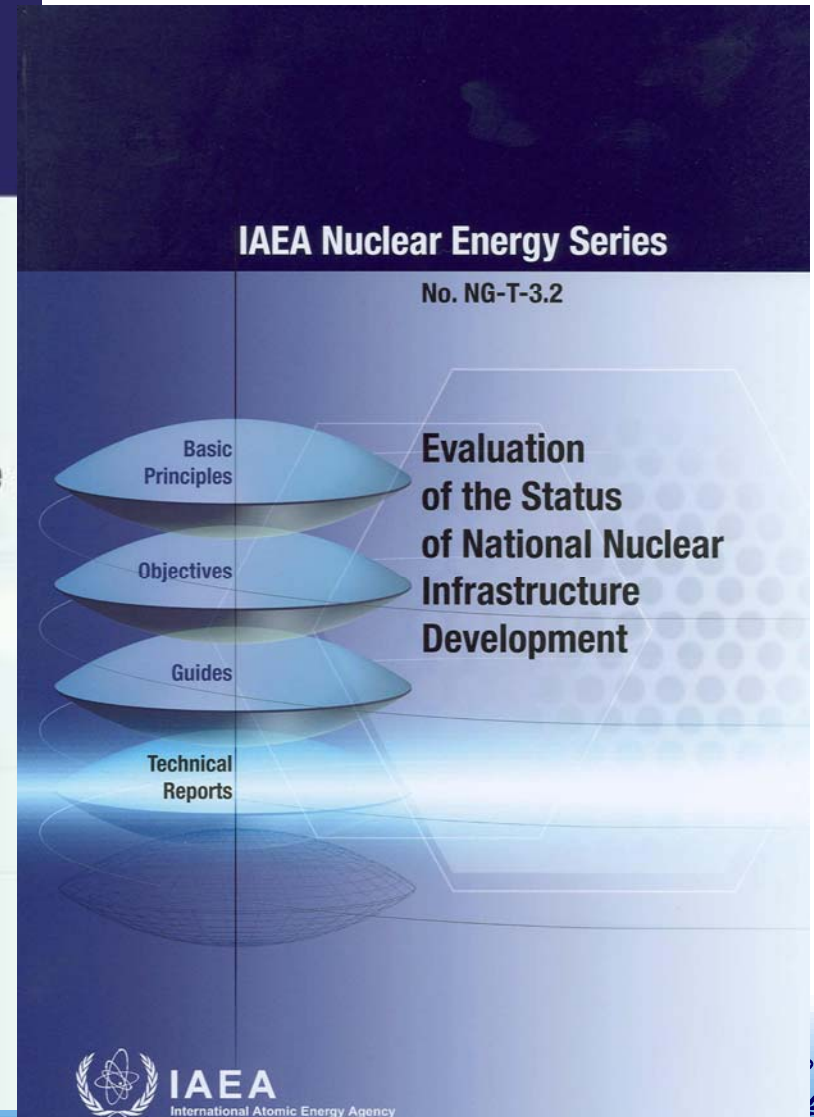
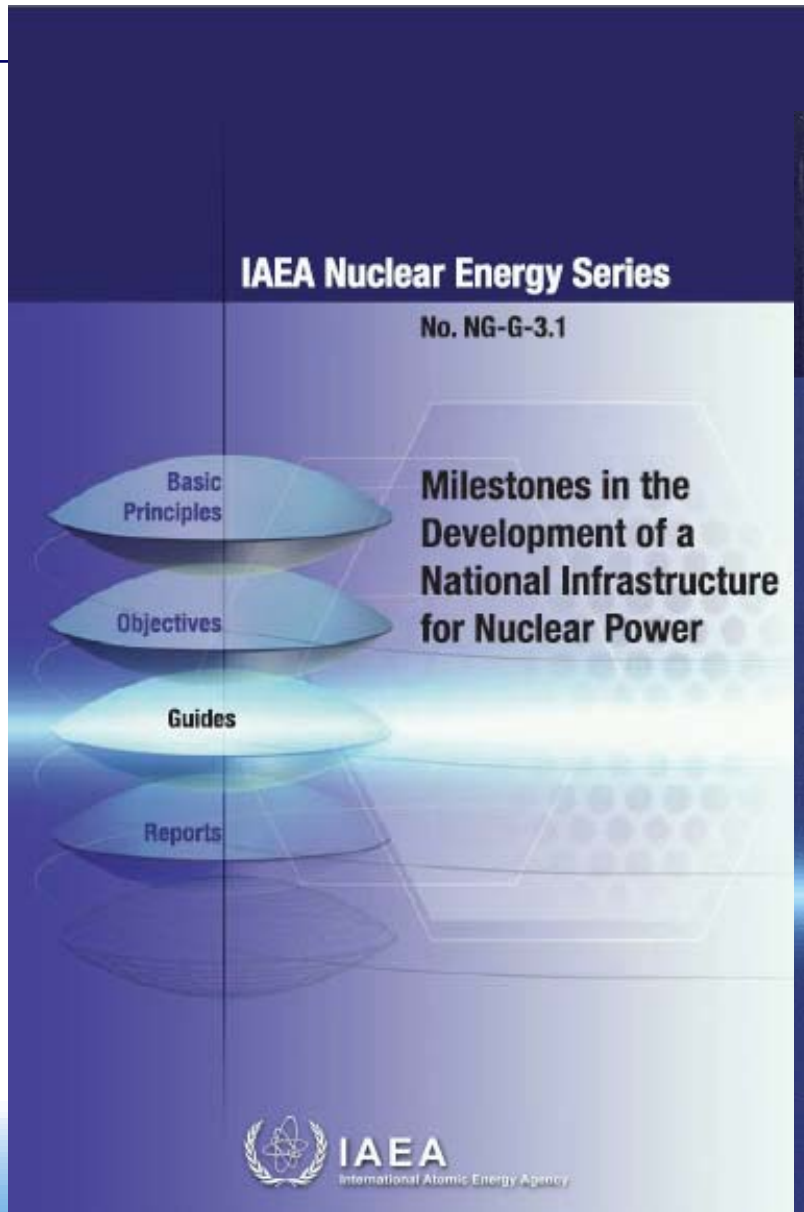
# INFRASTRUCTURE

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- **All features that are necessary in a given country for the successful deployment and operation of an nuclear energy system,**
- **These include legal, regulatory, institutional, manpower, training, resources, physical equipment and manufacturing facilities, economic, socio-political features**
- **Technology impacts all of the above**



# Agency's recent guidance documents re the introduction of NP



# “Milestones” Approach

Several interrelated activities considered in

## 3 MAJOR PHASES

1. Considerations before a decision to launch a nuclear power program is taken
2. Preparation work for the construction of a NPP after a policy decision has been made
3. Activities to implement the first NPP



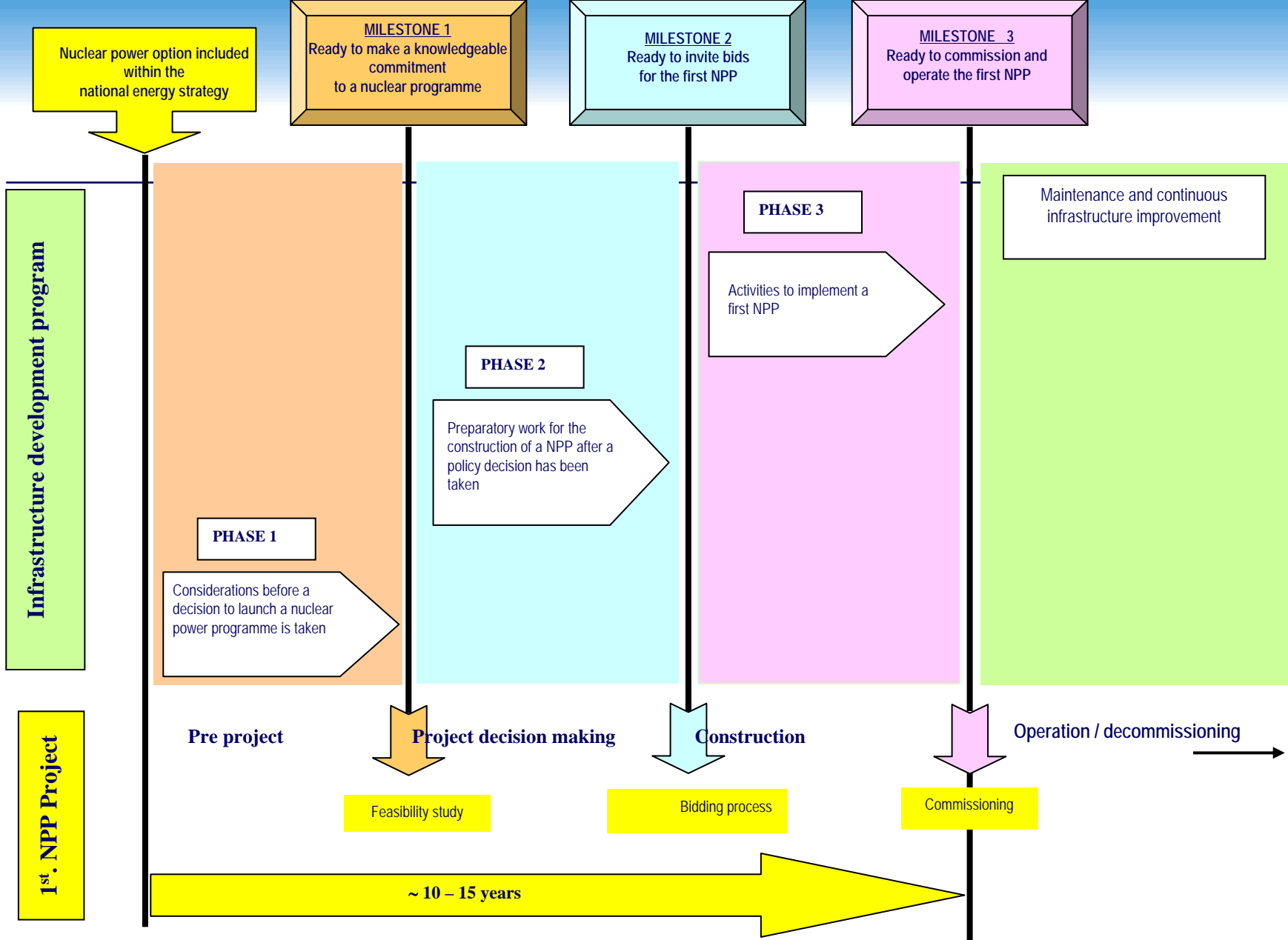
# “Milestones” Approach

At the end of each Phase

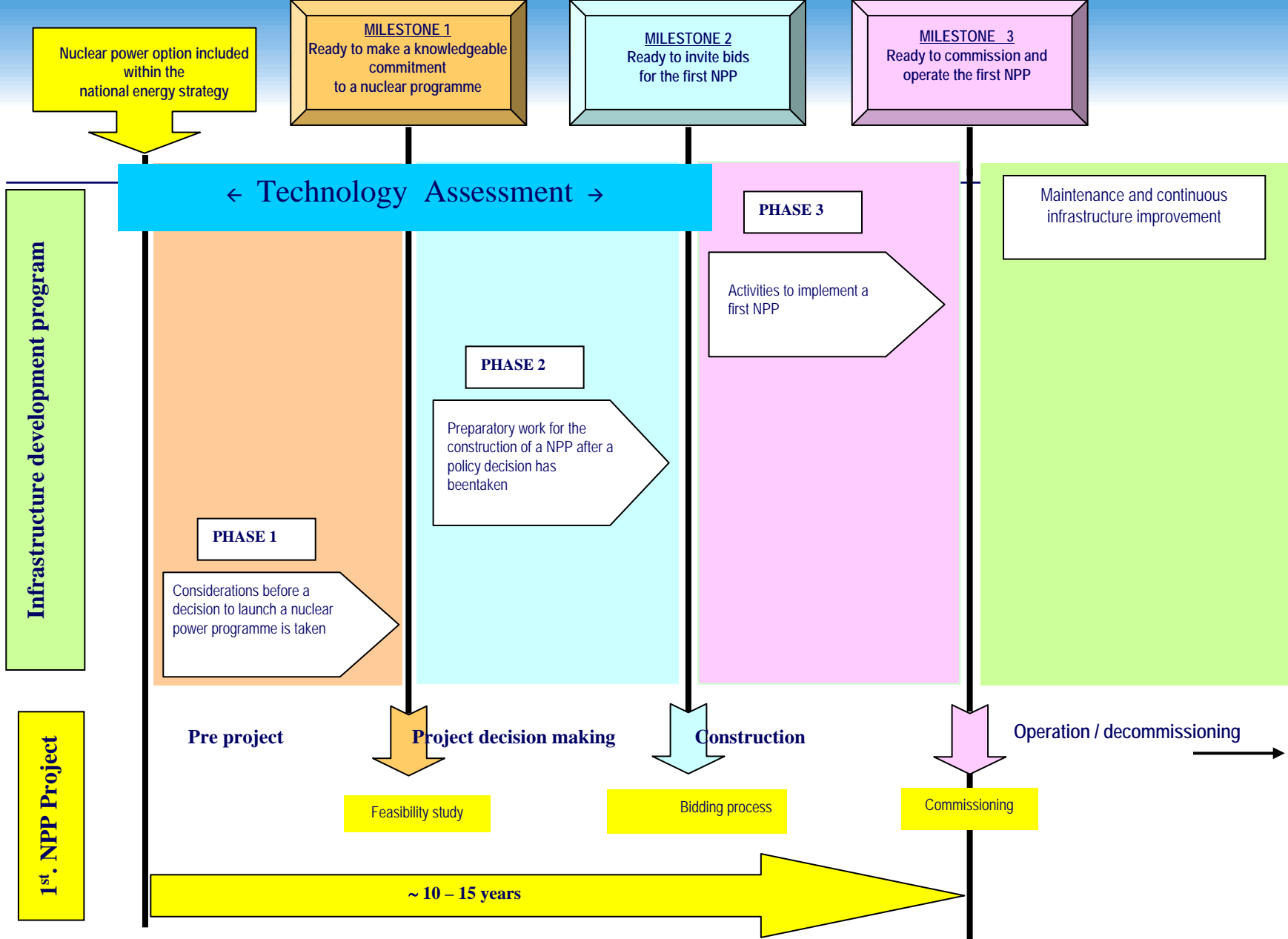
## 3 MILESTONES

- **Ready to make a knowledgeable commitment to a nuclear programme**
- **Ready to invite bids for the first NPP**
- **Ready to commission and operate the first NPP**





**INFRASTRUCTURE DEVELOPMENT PROGRAMME**



# Issues to be Addressed for Each Phase

ISSUES	MILESTONE-1	MILESTONE-2	MILESTONE-3
National position	☒	☒	☒
Nuclear safety	☒	☒	☒
Management	☒	☒	☒
Funding and financing	☒	☒	☒
Legislative framework	☒	☒	☒
Safeguards	☒	☒	☒
Regulatory framework	☒	☒	☒
Radiation protection	☒	☒	☒
Electrical grid	☒	☒	☒
Human resources development	☒	☒	☒
Stakeholder involvement	☒	☒	☒
Site and supporting facilities	☒	☒	☒
Environmental protection	☒	☒	☒
Emergency planning	☒	☒	☒
Security and physical protection	☒	☒	☒
Nuclear fuel cycle	☒	☒	☒
Radioactive waste	☒	☒	☒
Industrial involvement	☒	☒	☒
Procurement	☒	☒	☒

CONDITIONS

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CONDITIONS

Technology Assessment ?



# NEPIO

## (Nuclear Energy Programme Implementing Organization )

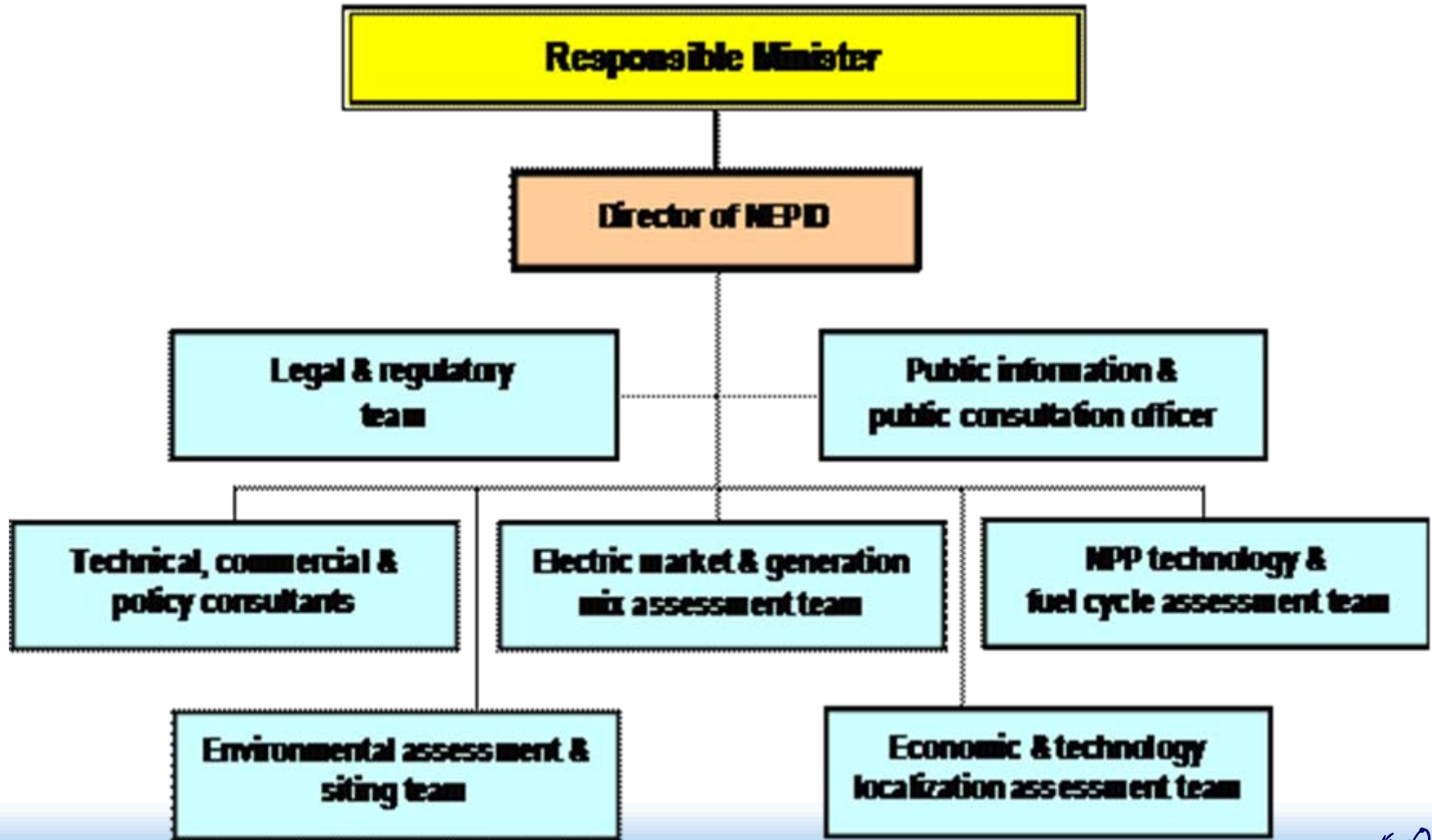
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❑ **Government-wide coordination group**

❑ **Functions**

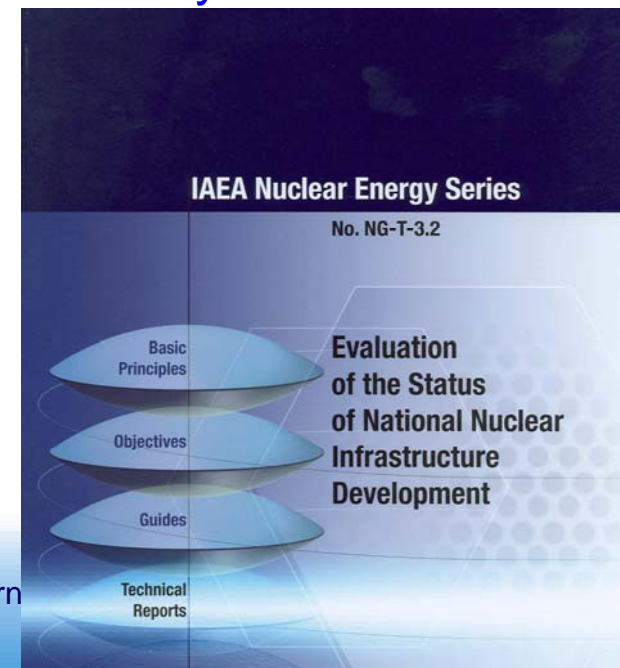
- **To study issues and conditions necessary for successful implementation of nuclear power;**
  - NP in the electricity market and generation mix
  - Economics of nuclear power
  - Expected role of the government and the private sector in the development of the nuclear programme etc.
- **To formulate policy,**
- **To plan policy implementation, and**
- **To make recommendations to Government**

# Nuclear Energy Programme Implementing Organisation



# Infrastructure review

- Self-assessment against Milestones document
- Assessment guide is on the IAEA web site
- The IAEA 's involvement could provide:
  - a) an objective view on the status of infrastructure
  - b) to clarify areas of further assistance from the Agency
  - c) confidence building in the country and internationally



# Phase 1 - Summary

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- Main Output: NP Feasibility Study
- Feasibility includes determining if there are proven technologies that are suitable considering the needs and characteristics of the country
- Thus, technology assessment should be an integrated part of the feasibility study, not a stand-alone activity.

# Phase 2 - Summary

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- Main outputs:
  - Site selection and evaluation
  - Licensing and other regulatory requirements
  - Bid invitation specification
- Technology has an impact on all of these outputs and also is impacted by them
- Thus, technology assessment is an important input that needs to be considered in an integrated way with the 19 issues of the Milestones approach.
- MS need clear advice from the IAEA on how they can effectively achieve Milestone 2

# Thank you for your attention!

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